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PATENT TRADEMARK OFFICE

Docket No: 0971/0D319

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Anatoly Gennadievich IVANOV

Serial No.: 08/995,715

Art Unit: 2672

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Examiner: J. Brier

For: METHODS FOR FORMING/RECORDING IMAGE AND DEVICES FOR SAME

PENDING CLAIMS

48. (Amended) An image display system comprising:

(a) at least one complementary screen of one of light emitting or light source modulating devices producing light in a two dimensional array of N (a real number) pixels, from which raster elements comprising one or more pixels are generated;

(b) a raster multiplying system comprising a plurality of optically connected light dividing elements, each said element to divide the light of the raster elements of the complementary screen into parts to form copies of the generated raster elements, with said

copies of said raster elements to be used in forming corresponding raster elements in P blocks, each block generally comprising a two dimensional array of pixels;

(c) an array of controllable modulators to independently modulate each of the raster elements for each of said P blocks; and

(d) a surface on which said P image blocks of a total number of M pixels are formed and displayed, where the number M exceeds the number N and where said surface preceding components of (a), (b) and (c) are placed in the mentioned order of the light path of the complementary screen.

49. (Not Amended) A system as in claim 48, comprising a plurality of modulators for each of said P blocks.

50. (Not Amended) A system as in claim 48, comprising a plurality of said complementary screens.

52. (Not Amended) A system as in claim 48 wherein a lens raster matrix forms said raster multiplying system.

55. (Not Amended) A system as in claim 71 further comprising a plurality of said complementary screens.

56. (Not Amended) A system as in claim 71 further comprising means for optic compression of generated raster elements for increasing the dot per inch resolution of a scanning light beam.

57. (Amended) A method for forming an image on an image display surface by forming a plurality of constituent blocks of said image, so that the image is presented as comprised of a plurality of blocks, comprising the steps of:

(a) providing at least one complementary screen having a two dimensional array of N pixels from which raster elements of one or more pixels are generated with one or more of said raster elements to comprise a block of an image;

(b) using a raster multiplying system comprising a plurality of light dividing elements for dividing an incoming light beam of each raster element into parts, with said light dividing elements to separate a raster element corresponding light beam into a plurality of beam components to form copies of each said generated raster element in P blocks, each block generally comprising a two dimensional array of pixels;

(c) transmitting the formed beam components to an array of controllable modulators to independently modulate the beam component corresponding to each raster element copy in accordance with control signals applied for each of said P blocks;

(d) repeating the procedure successively generating other raster elements from said complementary screen with said elements to simultaneously form a modulated raster in said blocks; and

(e) displaying the P image blocks having a total number of M pixels on an image display surface, where M is greater than N.

58. (Not Amended) A method as in claim 57 further comprising the step of using a plurality of complementary screens.

59. (Not Amended) A method as in claim 57 wherein a raster element comprises more than one pixel.

60. (Not Amended) A method as in claim 59, further comprising the step of subjecting a generated raster element to additional optical compression for increasing dot per inch resolution of a sensitive plane scanning beam.

61. (Not Amended) A method as in claim 57 wherein a raster element is of the size of only one pixel.

63. (Not Amended) A method as in claim 57 comprising the use of lens raster matrix instead of said plurality of light dividing elements.

67. (Not Amended) A method as in claim 73 wherein a raster element comprises a plurality of pixels.

68. (Not Amended) A method as in claim 73 wherein a said raster element comprises any one pixel.

69. (Amended) A 3D holographic image display system comprising:

(a) at least one complementary screen of one of light emitting or light source modulating devices in a two dimensional array of  $N$  (a real number) pixels, from which raster elements comprising one or more pixels are generated;

(b) a raster multiplying system comprising a plurality of passive and at least partly light transmitting elements to form copies of said generated raster elements of a complementary screen, with said raster element copies forming a raster in  $P$  blocks with each block generally comprising a two dimensional array of pixels;

(c) an array of controllable modulators to independently modulate the raster of each of said  $P$  blocks;

(d) a surface on which a hologram blocks of total number of  $M$  pixels are formed, where the number  $M$  exceeds number  $N$  and where said surface preceding components of (a), (b) and (c) are placed in the mentioned order of the light path of the complementary screen; and

(e) a holograph generator for producing a 3D holographic image from said surface.

71. (Amended) A system as in claim 48 used for image recording further

comprising:

(e) a photosensitive plane on which an outer image to be recorded is produced, said outer image comprising a plurality of said blocks, each block being of a two dimensional array of pixels, and all said blocks comprising M pixels, where the number M exceeds the number N, and where said system components of (a), (b) and (c) are placed in the mentioned order of the light path of the complementary screen; and

(f) means to scan said outer image on said photosensitive plane into electric signals for recording.

73. (Not Amended) A method as in claim 57 used for image recording wherein said image display surface of step (e) comprises a photosensitive plane on which an outer image is produced and further comprising that the step of point (b) is followed by:

(f) converting the image information received on said plane by the projection of said beam components into P electric signals, one signal for one of said P blocks, for recording received information for P separate image elements; and

(g) repeating the procedure by successively generating other raster elements on said complementary screen, to simultaneously scan each of P blocks.

75. (Amended) A method as in claim 57 further comprising the step of generating a 3D image from said image display surface.

76. (Amended) A method as in claim 57 further comprising the step of subjecting raster elements of said complementary screen to additional optical compression for increasing dot per inch resolution.

77. (Not Amended) A system as in claim 48 further comprising means for optic compression of complementary screen raster elements for increasing the dot per inch resolution.

78. (Amended) A system as in claim 48 further comprising partly transparent mirrors as said light dividing elements.

79. (Not Amended) A system as in claim 69 wherein an array of light dividing elements forms said raster multiplying system.